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begins from three weeks to a month earlier. I have taken birds late in October that still were moulting from the nest plumage.

49. *Cyrtonyx montezumæ*. MASSENA PARTRIDGE.—This partridge I found rather commonly in the evergreen oak region of the Pinal Mountains, near the head of Mineral Creek. Also in about the same abundance and in the same localities on the San Pedro slope of the Catalina Mountains, ranging up as high as 5700 feet, and as low as 4000 feet throughout the year. It is generally to be met with in small coveys of from six to a dozen birds, and seems to affect points where the coarser bunch grass is most luxuriant. I have not found it breeding, but have taken young about two-thirds grown and still in the nest plumage early in October, in the Catalina Mountains.

Mr. Brown tells me that it is a common species in the oak region of the Santa Rita Mountains, and is generally to be met with in the same region on the mountains southward to the Mexican border.

50. *Meleagris gallopavo mexicana*. MEXICAN TURKEY.—The only records of this species that I have are from the San Pedro River, and the oak and pine region of the Catalina Mountains. The bird seems, from what I can learn, to have already greatly decreased in numbers in most localities, and to have become exterminated in others where it was formerly abundant. In the pine woods of the Catalinas at the highest altitudes it was very common late in November, 1885, though snow covered the ground.

(To be continued.)

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## ADDITIONAL NOTES ON PEALE'S PETREL (*ÆSTRELATA GULARIS*).

BY WILLIAM BREWSTER.

In his description\* of the new Alaskan Petrel, *Æstrelata fisheri*, Mr. Ridgway intimates that perhaps I was mistaken in referring an *Æstrelata* taken in Western New York† to *Æ. gularis*, adding that it "seems, judging from the description, to belong rather to *Æ. fisheri*." Through the courtesy of the National Museum the type of *Æ. gularis* has been permitted to make a second journey to Cambridge, this time in company with the type of *Æ. fisheri*; thus these three interesting birds are at length brought together.

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\* Proc. U. S. Nat. Mus., Vol. V, 1883, pp. 656-658.

† Bull. N. O. C., Vol. IV, April, 1881, pp. 91-97.

After carefully comparing them I am led to the following conclusions: (1) That *Æ. fisheri* Ridgw. is perfectly distinct from *Æ. gularis* Peale. (2) That the New York waif is equally distinct from *Æ. fisheri*. (3) That this New York bird may be also distinct from *Æ. gularis*.

In referring it to *Æ. gularis*, I ascribed the difference in color of the two specimens to a difference of age, assuming that the case afforded a fair parallel to that made out by Dr. Coues for the closely related *Æ. mollis*, which, according to the author just named, has several well-defined progressive stages of plumage, from the nearly uniform sooty or fuliginous condition of the young bird, to the ashy-gray and white livery of the adult.

Mr. Ridgway, however, has lately said\* that "no fact in ornithology can be more thoroughly established than that, with the possible exception of the Albatrosses, the Petrels have no distinct progressive stages of plumage, the young assuming with their first feathers the fully adult livery"; an opinion which seems to be shared by the best European authorities on Procellariidæ.

Granting this to be an established fact—I have no disposition to dispute it—my former theory that the New York bird and Peale's type of *gularis* represent different ages of the same species must be, of course, abandoned. It is still possible to fall back on a theory of dichromatism, and to assume that the *Æstrelatæ*, like certain of the Fulmars, have two phases, a dark or fuliginous, and a light or grayish one. The fact that my bird agrees so closely with Peale's in every structural respect, and that the difference between the two consists chiefly in the absence in my specimen of the sooty wash which overlies most of the plumage of the type, has made me hesitate to discard such an apparently reasonable hypothesis. Indeed, I do not wholly discard it, for I cannot help suspecting that it may turn out to be the real solution of the problem; but having no material by which to either prove or disprove it, I merely call attention to it in passing, and adopt what seems to be the only plain course, viz.: that of naming and describing the New York bird as follows:—

*Æstrelata scalaris*, nov. sp.—SCALED PETREL.

SP. CHAR. *Adult.* Sex—? (No. 5224, Coll. W. B., Mt. Morris, Livingston Co., New York, April, 1880). Beneath white, immaculate only on

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\* Proc. U. S. Nat. Mus., Vol. V, 1883, p. 658.

the chin, throat, jugulum, central portion of breast and under tail-coverts;\* sides and lower portion of breast finely mottled or vermiculated with grayish-ash; axillars, sides of body, crissum, and anal region with numerous broken, confused, but generally transverse, bars of plumbeous gray; abdomen dark slaty plumbeous, the feathers just perceptibly tipped with gray, giving the darker color a slightly hoary appearance. Above, with the forehead, crown, occiput, back, scapulars, and rump dark bluish-ash, darkest (with a slaty cast) on the rump, occiput, and ends of the longer scapulars; feathers of the forehead rather broadly and conspicuously margined and tipped with white; those of the crown narrowly with grayish-white; those of the occiput essentially plain; feathers of the back, as well as the scapular coverts, broadly tipped with ashy white, giving the plumage of these parts a scaled appearance; tail faded brownish-ash, essentially plain above, even when widely spread, although the outer three pairs of feathers have concealed white spaces mottled with gray on their inner webs, the white being most extended and purest on the outer pair and diminishing so rapidly inward that on the fourth pair it is nearly wanting, and on the central four feathers practically entirely so, these feathers being perfectly plain and uniform on both webs nearly to their bases.

The wings are difficult of description. On their under surfaces the exposed (inner) webs of the primaries and secondaries are ashy-white to within about an inch of their tips, which are light faded brown on both webs. The middle and greater under-coverts are pure white with a silky sheen; the lesser under-coverts blackish slate, forming a narrow dark band, bordered outwardly (or anteriorly) next the body by white, but about midway between the body and the carpal joint spreading over the plumage which lines the edge of the wing beneath, and from this point forward to the ends of the under primary coverts, extending quite to the edge of the wing.

On the upper or outer surface the first primary is dark slaty brown, the tenth pale faded brown with a hoary tinge; the intermediate ones form a perfectly graduated, connecting series, each, beginning with the first, being slightly paler and grayer than the preceding one. The secondaries and tertiaries are all uniform and rather darker than the darkest primary, but still with obscure hoary on their outer webs. All the primaries and secondaries have pure white spaces on their inner vanes, and basally, for a varying but always short distance, all are white across both vanes. On the outer vane the white comes rather abruptly to an end just below the point reached by the tips of the overlapping primary coverts. On the inner vane it diverges from the shaft a little beyond this point and extends to within about an inch of the extremity of the feather, leaving a gradually widening dusky space next the shaft. On the first primary this white space ends apically in a long, acute point, formed and bounded on three sides by the dark color which extends backward along the inner margin of the inner vane for nearly two inches. On each succeeding feather this dark

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\* A few of the shorter under tail-coverts have plumbeous spots on bars.

inner margin is shortened until with the sixth it disappears, the white on this feather, and all the remaining ones, ending more or less abruptly and squarely.

The primary coverts are essentially similar to the primaries, but with less white on their inner vanes. The greater, middle, and lesser secondary coverts are concolor with the back (hence, much lighter and bluer than the secondaries), and, like the feathers of the back, each is tipped, as well as margined, with ashy-white, forming narrow but distinct light wing-bands. The anterior edge of the wing, for a space more than an inch in width, is abruptly darker than the adjoining secondary coverts, and rather darker, as well as decidedly more sooty, than the darkest primaries.

There is much dark mottling about the eye, but the lores and a rather broad superciliary strip are pure white. The bill is black; the tarsus dull flesh-color. The basal third of toes, with contained webs, pale straw color; the terminal portion black.

Measurements: Bill (chord of culmen), 1.03 in.; height at base, .46; width, .42; length of nostril tubes to middle of incision, .16; to extremity, .25; tarsus, 1.37; outer toe and claw, 1.65; middle, 1.70; inner, 1.43; wing, 9.88; tail, 3.95; the graduation of the rectrices, .90.

The Petrel just described differs from *Æ. fisheri* in having a stouter, more strongly hooked bill, much shorter nasal tubes, less white on the forehead, crown and wings, the inner two pairs of tail-feathers perfectly plain on both webs, and the outer three pairs with faint sparse mottling on the inner webs only.\* From both *fisheri* and *gularis* it differs in having the feathers of the back, as well as the greater and middle wing-coverts, tipped and edged with white, giving the back a scaled appearance, and on the wings forming distinct bands. Neither *fisheri* nor *gularis* shows any trace of white on the back, and neither has anything approaching well defined wing-bands. The nostril tubes in *Æ. scalaris* are apparently shorter and more prominent than the *Æ. gularis*, their superior outline straighter, the ends more squarely cut off and less deeply incised. The tubes in the type of *fisheri* have been apparently mutilated, so that their original shape cannot be safely stated, but they were certainly nearly twice as long as in either *gularis* or *scalaris*.

Despite the wide dissimilarity in coloring, the bird under consideration is clearly nearer related to *Æ. gularis* than to any other known species. Structurally the two appear to be identical (save in respect to the slight, perhaps trifling, difference

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\* The type of *fisheri* has lost the central pair of tail feathers, but all the others have much white mottling on both webs, giving the upper surface of the tail a conspicuously variegated appearance.

in the nasal tubes just mentioned), and, as already hinted, they may prove to be merely the dark and light extremes of a species subject to dichromatism. If really distinct from each other, as both unmistakably are from *Æ. fisheri*, the three birds furnish a remarkable case, viz.: that of three closely related species, the habits and distribution of which are almost wholly unknown, and each of which is at present represented by only a single specimen. To the species just described it is not even possible to ascribe a provisional habitat, its occurrence in the interior of New York being obviously accidental.

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## RECENT LITERATURE.

**The A. O. U. Code and Check-List of North American Birds.\*** Few scientific books of recent years have been awaited with as much interest as this 'Check-List' of birds and its accompanying 'Code.' To those interested in systematic ornithology, the work is, of course, of the highest importance, as giving an authoritative settlement—so far as authority can settle anything in science—of the much-vexed questions in bird nomenclature. But to the systematic workers in other departments of Zoölogy, and even to botanists, its interest is scarcely less great.

For we who work in other fields are very willing to recognize the fact that the great questions which underlie all systematic nomenclature must be first met and settled by the ornithologists. The abundance and attractiveness of birds and the ease with which they may be collected and studied have combined to render ornithology one of the best cultivated of all departments of science. In spite of a good deal of amateur work, which, in one way or another, gets published, it is, I think, not too much to say that in all the various matters which make up the ground-work of systematic science—in the discrimination of species and varieties, in the study of the relations of these groups to each other, and to their environment—American ornithology stands at the front of systematic science.

We may, therefore, in the various stages through which our ornithology has passed, or is passing, read the future history of our own branches of science. In many regards, the ornithologists are fighting our battles for us, and we may take advantage of the results won by their efforts. Thus the discussions of climatic influences on the characters of species, first serious-

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\* The Code of Nomenclature | and | Check-List | of | North American Birds | Adopted by the American Ornithologists' Union | being the Report of the Committee of the | Union on Classification and | Nomenclature | — | Zoölogical Nomenclature is a means, not an end, of Zoölogical Science | — | New York | American Ornithologists' Union | 1886. 8vo, pp. viii + 392.